



Otay Ranch Village 3 North and a Portion of Village 4

Energy Conservation Plan



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I. INTRODUCTION

The Otay Ranch GDP requires the preparation of an Energy Conservation Plan to identify feasible methods to reduce the consumption of non-renewable energy sources, including but not limited to, transportation, building design and use, lighting, recycling, alternative energy sources and land use.

Fossil fuels provide the majority of non-renewable energy sources in the San Diego region. These fuels are directly consumed in the form of gasoline, diesel fuel and natural gas, and indirectly consumed as electricity generated from these fuels. The goals, objectives and policies of the GDP provide for the long-range increase in conservation and reduction of consumption of non-renewable energy sources.

On November 14, 2000, the City Council adopted the Carbon Dioxide (CO₂) Reduction Plan, which included implementing measures regarding transportation and energy efficient land use planning and building construction measures for new development. In this Plan, it was recognized that the City's efforts to reduce carbon dioxide emissions from new development are directly related to energy conservation and air quality efforts. As a result, the City initiated a pilot study to develop a program to update the guidelines for preparation of required Air Quality Improvement Plans (AQIP). The pilot study involved the development of a computer model to evaluate the relative effectiveness of applying various site design and energy conservation features in new development projects. The results of the pilot study confirmed that the application of the Otay Ranch village design concept supports the City's energy conservation goals.

Opportunities for energy conservation in new development fall into three categories: the arrangement and intensity of land uses; mass transit and alternative transportation modes; and building siting, design and construction. The greatest opportunities for significant conservation are transportation related. The planning of Otay Ranch and its villages maximizes these opportunities by concentrating intensity of development around new transit facilities, providing for a regional transit-way and encouraging pedestrian, bicycle and electric cart travel as an alternative to the automobile. Village 3 North and a Portion of 4 ("Plan Area") has been designed in accordance with these energy conservation principles.



A. Land Use and Community Design

Land use and community design that encourages energy conservation include:

1. Multi-Modal Transportation Focused Development

Village 3 North concentrates housing, commercial, community purpose, school and neighborhood park land uses in and around a village core. A mixed use commercial development is provided within the centrally located village core. The southern portion of the Otay Ranch Business Park is within walking distance of the Village 3 North village core and residential neighborhoods. A network of pedestrian and bicycle circulation is provided throughout the village, connecting to the regional network and adjacent communities.

In addition, a Rapid Bus route is planned along Main Street, at the southern edge of Village 3 North. Local Bus service may be provided along Heritage Road, through the heart of the Business Park. A bus/transit stop may be provided on Heritage Road to serve both the Business Park and Village 3 North residents.

A 10' Regional Trail will connect Village 3 North to Village 2 along Heritage Road and Villages 4 and the Village 8 West Town Center along Main Street. The 10-ft. wide trail will be designed to accommodate both pedestrians and bicyclist who wish to utilize this unique system of pedestrian/bikeway pathways, and other regional trails. A Class 2 Bike Lane is planned along both Heritage Road and Main Street, providing a strong connection from Village 3 North to the City of Chula Vista Bikeway system.

2. Community Solar Orientation

Village 3 North is designed such that single family homes may benefit from the future installation and use of photovoltaic (PV) panels are oriented north/south which improves the efficiency of solar panels.

3. Housing Intensity

Village 3 North is comprised of smaller detached homes and attached buildings which use less energy for heating and cooling than larger, single-family detached homes. In addition, the small-lot single family homes have a smaller area of landscaping



than typical single-family lots, which reduces the amount of water used for irrigation.

4. Street Widths, Pavement and Street Trees

Otay Ranch street sections are narrower than typical standards. Narrow streets and a reduction in asphalt pavement reduce the “urban heat-island effect” by limiting the amount of reflective surfaces and the demand for air conditioning. Street trees provide shade which further reduces heat-gain. Street and parking lot tree planting shall comply with the City of Chula Vista Shade Tree Policy Number 576-19 (May 22, 2012). The objective is to maximize shade cover to the greatest extent possible. Shade trees shall be provided for all new parking lots that will achieve 50% canopy cover over the parking stall areas five to 15 years after planting.

B. Transit Facilities and Alternative Transportation Modes

Village 3 North is designed to accommodate public transportation and alternative travel modes to reduce energy consumption:

1. Public Transportation

Rapid Bus service is planned along Main Street, adjacent to Village 3 North. In addition, Local Bus service may be provided along Heritage Road, through the heart of the Otay Ranch Business Park. A bus/transit stop may be provided along Heritage Road to serve both the Otay Ranch Business Park and Village 3 North residents.

2. Alternative Travel Modes

Alternative travel modes include pedestrians and bicycles. Village 3 North includes an integrated network of pedestrian trails and pathways, including the Chula Vista Regional Trail, Village Pathway and Promenade Trail. These pedestrian facilities provide multiple routes through the village and strong linkages to the regional pedestrian network. Bicycle facilities include Class 2 Bike Lanes along Main Street and Heritage Road, as well as Class 3 Bike Routes on key internal village streets.



C. Building Siting and Construction

The City of Chula Vista adopted the 2013 California Green Building Code Chapters 4 and 5, which address the following:

- Planning and Design
- Energy Efficiency
- Water Efficiency and Conservation
- Material Conservation and Resource Efficiency
- Environmental Quality.

These standards apply to all new residential and non-residential construction.

1. Energy Efficiency

Homes within Village 3 North will be constructed to comply with the current California Energy Code Requirements.

2. Solar Access

Passive solar design and building orientation can take advantage of the sun in the winter for heating and reduce heat gain and cooling needs during the summer. See the discussion above regarding community. Village 3 North and a portion of Village 4 will also comply with the City of Chula Vista's "Solar Ready" Ordinance which requires solar hot water pre-plumbing (CVMC Section 15.28.015) and photovoltaic pre-wiring requirements (CVMC 15.24.065). These requirements facilitate future installation of solar hot water systems and roof top photovoltaic panels.

3. Lighting

Energy efficient lighting will be used to light streets, parks and other public spaces. Builders will be encouraged to use energy efficient lighting in commercial and residential development. Lighting will comply with current California Energy Code requirements



4. Water Efficiency

The Village 3 North and a Portion of Village 4 SPA Plan includes a Water Conservation Plan which outlines strategies to reduce water use inside and outside of the built environment. These strategies include the following requirements:

Indoor Water Conservation

Plumbing fixtures and fixture fittings shall comply with the current California Energy Code.

Outdoor Water Use

Outdoor water use shall comply with the requirements of current California Green Building Standards Code.

Controllers for landscaping provided by the builder and installed at the time of final inspection shall comply with the following:

- Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
- Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

5. Construction Waste Reduction, Disposal And Recycling.

Comply with requirements of the current California Green Building Standards Code.